

**THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

UNILOC USA, INC. ET AL,

Plaintiffs,

v.

HUAWEI DEVICE USA, INC. ET AL,

Defendants.

§  
§  
§  
§  
§  
§  
§  
§  
§

Case No. 2:17-CV-736-JRG-RSP

**CLAIM CONSTRUCTION**  
**MEMORANDUM AND ORDER**

The parties stipulated that oral arguments are not necessary for construction of the disputed claim terms in United States Patent No. 7,690,556. *See* Dkt. No. 69. Having reviewed the arguments made by the parties in their claim construction briefing (Dkt. Nos. 63, 66, & 67),<sup>1</sup> having considered the intrinsic evidence, and having made subsidiary factual findings about the extrinsic evidence, the Court hereby issues this Claim Construction Memorandum and Order. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc); *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015).

---

<sup>1</sup> Citations to documents (such as the parties' briefs and exhibits) in this Claim Construction Memorandum and Order refer to the page numbers of the original documents rather than the page numbers assigned by the Court's electronic docket unless otherwise indicated.

## Table of Contents

<b>I. BACKGROUND.....</b>	<b>3</b>
<b>II. LEGAL PRINCIPLES .....</b>	<b>3</b>
<b>III. THE PARTIES' STIPULATED TERMS.....</b>	<b>6</b>
<b>IV. CONSTRUCTION OF DISPUTED TERMS .....</b>	<b>6</b>
A. "a step calculation logic to utilize the motion detected by the accelerometer to detect and count steps" .....	6
B. "the incline logic to utilize the change in altitude to make an additional calculation of the incline of the surface, and to verify the calculation of the incline using the additional calculation of the incline" .....	7
C. "an energy calculation logic to calculate a calorie expenditure of the user, based on the three dimensional motion of the user, wherein the energy calculation logic takes into account the incline of the surface" .....	8
D. "an incline logic to utilize the motion detected by the accelerometer to make a calculation of an incline of a surface on which the user moved for one or more of the steps" and "an incline logic to utilize the motion detected by the motion detection apparatus to make a calculation of an incline of the surface to associate with user steps" .....	9
E. "vertical travel up/down portion of the step" .....	11
F. "computing a difference between the vertical travel up portion and the vertical travel down portion of the step" .....	12
G. "calorie expenditure calculator to calculate a calorie expenditure for the user based on the steps and incline data" .....	13
H. "a motion detection apparatus to detect three dimensional motion of a user on a surface" .....	16
I. "incline" .....	20
J. "[based on/calculated by] identifying a vertical travel up portion of the step, identifying a vertical travel down portion of the step, and computing a difference between the vertical travel up portion and the vertical travel down portion of the step" .....	21
K. "based on the steps and incline data" and "based on the step data and the incline data" ....	21
L. Order of Steps in Claims 17 and 18 .....	23
<b>V. CONCLUSION.....</b>	<b>25</b>

## I. BACKGROUND

Plaintiffs Uniloc USA, Inc. and Uniloc Luxembourg, S.A. (“Plaintiffs” or “Uniloc”) have alleged infringement of United States Patent No. 7,690,556 (“the ’556 Patent”) by Defendants Huawei Device USA, Inc. and Huawei Device Co. Ltd. (collectively, “Defendants” or “Huawei”).

The ’556 Patent, titled “Step Counter Accounting for Incline,” issued on April 6, 2010, and bears a filing date of January 26, 2007. U.S. Patent No. 7,690,556 at [22], [45], & [54]. The Abstract of the ’556 Patent states:

A method and apparatus for a step counter system is described. The step counter system comprises an accelerometer to detect motion of a user, a step calculation logic to utilize the motion detected by the accelerometer to detect and count steps, and an incline logic to calculate an incline of a surface on which the user moved.

*Id.* at [57].

The Court construed terms in the ’556 Patent in *Uniloc USA, Inc. v. Samsung Electronics America, Inc., et al.*, No. 2:17-CV-651, Dkt. No. 77, 2018 WL 5296046 (E.D. Tex. Oct. 24, 2018) (“*Samsung*”).

## II. LEGAL PRINCIPLES

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” *Phillips*, 415 F.3d at 1312 (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). Claim construction is clearly an issue of law for the court to decide. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970–71 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996). “In some cases, however, the district court will need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period.” *Teva*, 135 S. Ct. at 841 (citation omitted). “In cases where those subsidiary facts are in dispute, courts will need to make

subsidiary factual findings about that extrinsic evidence. These are the ‘evidentiary underpinnings’ of claim construction that [were] discussed in *Markman*, and this subsidiary factfinding must be reviewed for clear error on appeal.” *Id.* (citing 517 U.S. 370).

To determine the meaning of the claims, courts start by considering the intrinsic evidence. *See Phillips*, 415 F.3d at 1313; *see also C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). The intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1314; *C.R. Bard*, 388 F.3d at 861. Courts give claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the entire patent. *Phillips*, 415 F.3d at 1312–13; *accord Alloc, Inc. v. Int’l Trade Comm’n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

The claims themselves provide substantial guidance in determining the meaning of particular claim terms. *Phillips*, 415 F.3d at 1314. First, a term’s context in the asserted claim can be very instructive. *Id.* Other asserted or unasserted claims can aid in determining the claim’s meaning because claim terms are typically used consistently throughout the patent. *Id.* Differences among the claim terms can also assist in understanding a term’s meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314–15.

“[C]laims ‘must be read in view of the specification, of which they are a part.’” *Id.* at 1315 (quoting *Markman*, 52 F.3d at 979). “[T]he specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’” *Phillips*, 415 F.3d at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *accord Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325

(Fed. Cir. 2002). This is true because a patentee may define his own terms, give a claim term a different meaning than the term would otherwise possess, or disclaim or disavow the claim scope. *Phillips*, 415 F.3d at 1316. In these situations, the inventor’s lexicography governs. *Id.* The specification may also resolve the meaning of ambiguous claim terms “where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone.” *Teleflex*, 299 F.3d at 1325. But, “[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims.” *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); accord *Phillips*, 415 F.3d at 1323.

The prosecution history is another tool to supply the proper context for claim construction because a patent applicant may also define a term in prosecuting the patent. *Home Diagnostics, Inc. v. Lifescan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004) (“As in the case of the specification, a patent applicant may define a term in prosecuting a patent.”). “[T]he prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance.” *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed. Cir. 1985).

Although extrinsic evidence can be useful, it is “less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Phillips*, 415 F.3d at 1317 (citations and internal quotation marks omitted). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too broad or

may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert’s conclusory, unsupported assertions as to a term’s definition are entirely unhelpful to a court. *Id.* Generally, extrinsic evidence is “less reliable than the patent and its prosecution history in determining how to read claim terms.” *Id.*

The Supreme Court of the United States has “read [35 U.S.C.] § 112, ¶ 2 to require that a patent’s claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2129 (2014). “A determination of claim indefiniteness is a legal conclusion that is drawn from the court’s performance of its duty as the construer of patent claims.” *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005) (citations and internal quotation marks omitted), *abrogated on other grounds by Nautilus*, 134 S. Ct. 2120.

### III. THE PARTIES’ STIPULATED TERMS

Prior to the start of claim construction briefing, “[t]he parties ha[d] not reached an agreement as to the construction of any claim terms/phrases.” Dkt. No. 59, Sept. 12, 2018 Joint Claim Construction and Prehearing Statement at 1.

### IV. CONSTRUCTION OF DISPUTED TERMS

#### A. “a step calculation logic to utilize the motion detected by the accelerometer to detect and count steps”

Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
Ordinary meaning	Subject to 35 U.S.C. § 112, ¶ 6
	Indefinite

Dkt. No. 59, Ex. A at 2; Dkt. No. 66 at 2; Dkt. No. 68 at 4. The parties submit that this term appears in Claim 1. Dkt. No. 59, Ex. A at 2; Dkt. No. 68 at 4.

Plaintiffs argue that “[t]he phrase[] . . . do[es] not appear, on [its] face, to be indefinite, nor does the context in which [it] appear[s] seem to raise issues.” Dkt. No. 63 at 7. Defendants respond that the Court should find this term indefinite for the same reasons set forth in *Samsung*. Dkt. No. 66 at 2–3. Plaintiffs reply that “Uniloc will rest on its prior pleadings . . . as to terms that were already construed by Judge Gilstrap [in *Samsung*],” including this term. Dkt. No. 67 at 2.

The additional disclosures cited here by Plaintiffs do not warrant departing from *Samsung*. See ’556 Patent at 2:37–38, 3:39–41, & 4:17–38. The Court therefore adopts the *Samsung* construction and accordingly hereby finds that **“step calculation logic to utilize the motion detected by the accelerometer to detect and count steps”** is a means-plus-function term governed by 35 U.S.C. § 112, ¶ 6, the claimed function is **“to utilize the motion detected by the accelerometer to detect and count steps,”** and lack of corresponding structure renders the term **indefinite**.

**B. “the incline logic to utilize the change in altitude to make an additional calculation of the incline of the surface, and to verify the calculation of the incline using the additional calculation of the incline”**

Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
Ordinary meaning	Subject to 35 U.S.C. § 112, ¶ 6
	Indefinite

Dkt. No. 59, Ex. A at 3; Dkt. No. 66 at 3; Dkt. No. 68 at 6. The parties submit that this term appears in Claims 8 and 11. Dkt. No. 59, Ex. A at 3; Dkt. No. 68 at 6.

Plaintiffs argue that “[t]he phrase[] . . . do[es] not appear, on [its] face, to be indefinite, nor does the context in which [it] appear[s] seem to raise issues.” Dkt. No. 63 at 7. Defendants respond that the Court should find this term indefinite for the same reasons set forth in *Samsung*. Dkt. No.

66 at 3–4. Plaintiffs reply that “Uniloc will rest on its prior pleadings . . . as to terms that were already construed by Judge Gilstrap [in *Samsung*],” including this term. Dkt. No. 67 at 2.

The additional disclosures cited here by Plaintiffs do not warrant departing from *Samsung*. See ’556 Patent at 4:39–56. The Court therefore adopts the *Samsung* construction and accordingly hereby finds that **“the incline logic to utilize the change in altitude to make an additional calculation of the incline of the surface, and to verify the calculation of the incline using the additional calculation of the incline”** is a means-plus-function term governed by 35 U.S.C. § 112, ¶ 6, the claimed function is **“to utilize the change in altitude to make an additional calculation of the incline of the surface, and to verify the calculation of the incline using the additional calculation of the incline,”** and lack of corresponding structure renders the term **indefinite**.

**C. “an energy calculation logic to calculate a calorie expenditure of the user, based on the three dimensional motion of the user, wherein the energy calculation logic takes into account the incline of the surface”**

Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
Ordinary meaning	Subject to 35 U.S.C. § 112, ¶ 6
	Indefinite

Dkt. No. 59, Ex. A at 4; Dkt. No. 66 at 4; Dkt. No. 68 at 7. The parties submit that this term appears in Claim 9. Dkt. No. 59, Ex. A at 4; Dkt. No. 68 at 7.

Plaintiffs argue that “[t]he phrase[] . . . do[es] not appear, on [its] face, to be indefinite, nor does the context in which [it] appear[s] seem to raise issues.” Dkt. No. 63 at 7. Defendants respond that the Court should find this term indefinite for the same reasons set forth in *Samsung*. Dkt. No. 66 at 5. Plaintiffs reply that “Uniloc will rest on its prior pleadings . . . as to terms that were already construed by Judge Gilstrap [in *Samsung*],” including this term. Dkt. No. 67 at 2.



The additional disclosures cited here by Plaintiffs do not warrant departing from *Samsung*. See '556 Patent at 3:63–67 & 4:7–16. The Court therefore adopts the *Samsung* construction and accordingly hereby finds that **“an energy calculation logic to calculate a calorie expenditure of the user, based on the three dimensional motion of the user, wherein the energy calculation logic takes into account the incline of the surface”** is a means-plus-function term governed by 35 U.S.C. § 112, ¶ 6, the claimed function is **“to calculate a calorie expenditure of the user, based on the three dimensional motion of the user, wherein the energy calculation logic takes into account the incline of the surface,”** and lack of corresponding structure renders the term **indefinite**.

**D. “an incline logic to utilize the motion detected by the accelerometer to make a calculation of an incline of a surface on which the user moved for one or more of the steps” and “an incline logic to utilize the motion detected by the motion detection apparatus to make a calculation of an incline of the surface to associate with user steps”**

Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
Plain meaning	Subject to 35 U.S.C. § 112, ¶ 6  Indefinite

Dkt. No. 59, Ex. A at 3 & 4; Dkt. No. 66 at 6; Dkt. No. 68 at 5 & 7. The parties submit that these terms appear in Claims 1 and 9. Dkt. No. 59, Ex. A at 3 & 4; Dkt. No. 68 at 5 & 7.

#### (1) The Parties’ Positions

Plaintiffs argue that “[t]he[se] phrases . . . do not appear, on their face, to be indefinite, nor does the context in which they appear seem to raise issues.” Dkt. No. 63 at 7.

Defendants respond that *Samsung* erred by finding structure within the claims themselves because the claims merely describe inputs and outputs and do not include an algorithm that is sufficient to perform the recited function. Dkt. No. 66 at 6. Defendants conclude that these are

means-plus-function terms, and Defendants argue that the “general descriptions of function [in the specification] fail to detail any algorithm or structure.” *Id.* at 7.

Plaintiffs reply that “Uniloc will rest on its prior pleadings . . . as to terms that were already construed by Judge Gilstrap [in *Samsung*],” including these terms. Dkt. No. 67 at 2.

## (2) Analysis

Claims 1 and 9 recite (emphasis added):

1. A step counter system comprising:

- an accelerometer to detect motion of a user;
- a step calculation logic to utilize the motion detected by the accelerometer to detect and count steps; and
- an incline logic to utilize the motion detected by the accelerometer to make a calculation of an incline of a surface on which the user moved for one or more of the steps*, wherein the calculation is performed for a step based on identifying a vertical travel up portion of the step, identifying a vertical travel down portion of the step, and computing a difference between the vertical travel up portion and the vertical travel down portion of the step.

\* \* \*

9. A system comprising:

- a motion detection apparatus to detect three dimensional motion of a user on a surface;
- an incline logic to utilize the motion detected by the motion detection apparatus to make a calculation of an incline of the surface to associate with user steps*, wherein the calculation is performed for one or more of the user steps based on identifying a vertical travel up portion of the step, identifying a vertical travel down portion of the step, and computing a difference between the vertical travel up portion and the vertical travel down portion of the step; and
- an energy calculation logic to calculate a calorie expenditure of the user, based on the three dimensional motion of the user, wherein the energy calculation logic takes into account the incline of the surface.

Defendants argue that the claim language refers merely to “inputs and outputs” and does not include any sufficient algorithm (Dkt. No. 66 at 6), but “the sufficiency of the disclosure of algorithmic structure must be judged in light of what one of ordinary skill in the art would understand the disclosure to impart.” *Aristocrat Techs. Australia Pty Ltd. v. Int’l Game Tech.*, 521

F.3d 1328, 1337 (Fed. Cir. 2008). Defendants have not persuasively justified departing from the *Samsung* analysis. *See Samsung* at 34–36.

The Court therefore adopts the conclusion reached in *Samsung* and hereby finds that **“an incline logic to utilize the motion detected by the accelerometer to make a calculation of an incline of a surface on which the user moved for one or more of the steps”** and **“an incline logic to utilize the motion detected by the motion detection apparatus to make a calculation of an incline of the surface to associate with user steps”** are not means-plus-function terms and have their **plain meaning** in the context of surrounding claim language.

**E. “vertical travel up/down portion of the step”**

<b>“vertical travel up portion of the step”</b>	
<b>Plaintiffs’ Proposed Construction</b>	<b>Defendants’ Proposed Construction</b>
Ordinary meaning	“upwards vertical motion during the single step”
<b>“vertical travel down portion of the step”</b>	
<b>Plaintiffs’ Proposed Construction</b>	<b>Defendants’ Proposed Construction</b>
Ordinary meaning	“downwards vertical motion during the single step”

Dkt. No. 59, Ex. A at 1; Dkt. No. 66 at 7; Dkt. No. 68 at 2–3. The parties submit that these terms appear in Claims 1, 9, and 17. Dkt. No. 59, Ex. A at 1; Dkt. No. 68 at 2–3.

Defendants adopt the *Samsung* construction and agree with the Court’s reasoning in *Samsung*. Dkt. No. 66 at 8. Plaintiffs reply that “Uniloc will rest on its prior pleadings . . . as to terms that were already construed by Judge Gilstrap [in *Samsung*],” including these terms. Dkt. No. 67 at 2.

As to Defendants’ proposal of a “single step,” the Court rejects Plaintiffs’ counter-arguments for the same reasons set forth in *Samsung*. See *Samsung* at 12–13. The Court therefore adopts the *Samsung* constructions and hereby construes the disputed terms as set forth in the following chart:

<u>Term</u>	<u>Construction</u>
<b>“vertical travel up portion of the step”</b>	<b>“upwards vertical motion during the single step”</b>
<b>“vertical travel down portion of the step”</b>	<b>“downwards vertical motion during the single step”</b>

**F. “computing a difference between the vertical travel up portion and the vertical travel down portion of the step”**

<b>Plaintiffs’ Proposed Construction</b>	<b>Defendants’ Proposed Construction</b>
Plain meaning	Ordinary meaning [subject to the constructions for “vertical travel up/down portion of the step”]

Dkt. No. 59, Ex. A at 1; Dkt. No. 66 at 8; Dkt. No. 68 at 2. The parties submit that this term appears in Claims 1, 9, and 17. Dkt. No. 59, Ex. A at 1; Dkt. No. 68 at 2.

Plaintiffs argue that Defendants’ proposal of requiring subtraction should be rejected because “[t]he words distance and subtraction, however, do not even appear in the ’556 patent disclosure.” Dkt. No. 63 at 4–5. Plaintiffs also argue that “‘computing’ in common parlance can just mean using a computer.” *Id.* at 5.

Defendants respond by agreeing with the finding in *Samsung* that this term need not be construed apart from the *Samsung* constructions of the constituent “vertical travel up” and “vertical travel down” terms addressed above. Dkt. No. 66 at 8–9.

Plaintiffs reply that “Uniloc will rest on its prior pleadings . . . as to terms that were already construed by Judge Gilstrap [in *Samsung*],” including this term. Dkt. No. 67 at 2.

The Court therefore adopts the *Samsung* constructions and hereby construes “**computing a difference between the vertical travel up portion and the vertical travel down portion of the step**” to have its **plain meaning** (apart from the Court’s construction of constituent terms).

**G. “calorie expenditure calculator to calculate a calorie expenditure for the user based on the steps and incline data”**

Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
Plain meaning.	Subject to 35 U.S.C. § 112, ¶ 6
Not controlled by 35 U.S.C. § 112, ¶ 6.	Indefinite
If controlled by 35 U.S.C. § 112, ¶ 6, then the structures are disclosed by the ’556 patent at 2:28–31, 3:55–67, 4:7–16, 4:57–5:4 (calorie calculating and energy calculation logic); <i>see also</i> Figs. 2–4.	

Dkt. No. 59, Ex. A at 3; Dkt. No. 66 at 9; Dkt. No. 68 at 5. The parties submit that this term appears in Claim 2. Dkt. No. 59, Ex. A at 3; Dkt. No. 68 at 5.

#### (1) The Parties’ Positions

Plaintiffs argue that “[t]he phrase[] . . . do[es] not appear, on [its] face, to be indefinite, nor does the context in which [it] appear[s] seem to raise issues.” Dkt. No. 63 at 7.

Defendants respond that “as this Court determined in the *Samsung* Case for a very similar term (‘energy calculation logic’), ‘calorie expenditure calculator’ itself does not connote any structure.” Dkt. No. 66 at 9.

Plaintiffs reply that because *Samsung* found Claim 1 indefinite, the Court need not construe this term in dependent Claim 2. Dkt. No. 67 at 3. Alternatively, Plaintiffs argue that the presumption against means-plus-function treatment has not been rebutted because this disputed

term “uses a well-known term in computer science—calculator—that denotes computer structure, including hardware or firmware, as would be known by [a] person of ordinary skill in the art (or, frankly, a layperson).” *Id.* at 5. Plaintiffs also argue that the specification “discloses detailed sequences of steps” for performing the claimed function. *Id.*

## (2) Analysis

Title 35 U.S.C. § 112, ¶ 6 provides: “An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.”

“[T]he failure to use the word ‘means’ . . . creates a rebuttable presumption . . . that § 112, para. 6 does not apply.” *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (citations and internal quotation marks omitted). “When a claim term lacks the word ‘means,’ the presumption can be overcome and § 112, para. 6 will apply if the challenger demonstrates that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function.” *Id.* at 1349 (citations and internal quotation marks omitted).

*Williamson*, in an *en banc* portion of the decision, abrogated prior statements that the absence of the word “means” gives rise to a “strong” presumption against means-plus-function treatment. *Id.* (citation omitted). *Williamson* also abrogated prior statements that this presumption “is not readily overcome” and that this presumption cannot be overcome “without a showing that the limitation essentially is devoid of anything that can be construed as structure.” *Id.* (citations omitted). Instead, *Williamson* found, “[h]enceforth, we will apply the presumption as we have done prior to *Lighting World* . . . .” *Id.* (citing *Lighting World, Inc. v. Birchwood Lighting, Inc.*,

382 F.3d 1354, 1358 (Fed. Cir. 2004)). In a subsequent part of the decision not considered *en banc*, *Williamson* affirmed the district court’s finding that the term “distributed learning control module” was a means-plus-function term that was indefinite because of lack of corresponding structure, and in doing so *Williamson* stated that “‘module’ is a well-known nonce word.” *Id.* at 1350.

Here, Claim 2 of the ’556 Patent recites:

2. The step counter system of claim 1 further comprising a calorie expenditure calculator to calculate a calorie expenditure for the user based on the steps and incline data.

This use of the term “calculator” is distinguishable from the word “module” in *Williamson*. *Id.* at 1348 (“What is important is . . . that the term, as the name for structure, has a reasonably well understood meaning in the art.”) (quoting *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996)). Here, the term “calculator” is more analogous to, for example, the term “detector” discussed in *Personalized Media Communications, LLC v. International Trade Commission*, which found that “[e]ven though the term ‘detector’ does not specifically evoke a particular structure, it does convey to one knowledgeable in the art a variety of structures known as ‘detectors.’” 161 F.3d 696, 705 (Fed. Cir. 1998) (“We therefore conclude that the term ‘detector’ is a sufficiently definite structural term to preclude the application of § 112, ¶ 6.”).

Additional decisions by the Federal Circuit, prior to the abrogated *Lighting World* decision, provide further support. *See, e.g., Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1320 (Fed. Cir. 2004) (stating that “when the structure-connoting term ‘circuit’ is coupled with a description of the circuit’s operation, sufficient structural meaning generally will be conveyed to persons of ordinary skill in the art, and § 112 ¶ 6 presumptively will not apply” and noting “language reciting [the circuits’] respective objectives or operations”); *Apex Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364, 1372 (Fed. Cir. 2003) (“While we do not find it necessary to hold

that the term ‘circuit’ by itself always connotes sufficient structure, the term ‘circuit’ with an appropriate identifier such as ‘interface,’ ‘programming’ and ‘logic,’ certainly identifies some structural meaning to one of ordinary skill in the art.”); *Greenberg*, 91 F.3d at 1583 (finding that “detent mechanism” was not a means-plus-function term because it denotes a type of device with a generally understood meaning in the mechanical arts).<sup>2</sup> The opinions of Defendants’ expert to the contrary are unpersuasive. *See* Dkt. No. 66-3, Nov. 6, 2018 Stone Decl. at ¶¶ 58–60.

The Court therefore finds that **“calorie expenditure calculator to calculate a calorie expenditure for the user based on the steps and incline data”** is not a means-plus-function term and has its **plain meaning**.

**H. “a motion detection apparatus to detect three dimensional motion of a user on a surface”**

<b>Plaintiffs’ Proposed Construction</b>	<b>Defendants’ Proposed Construction</b>
<p>Plain meaning.</p> <p>Not controlled by 35 U.S.C. § 112, ¶ 6.</p> <p>If controlled by 35 U.S.C. § 112, ¶ 6, then the structures are disclosed by the ’556 patent at 3:34–38, 4:21–31, 4:41–44.</p>	<p>Subject to 35 U.S.C. § 112, ¶ 6</p> <p>Function: “to detect three dimensional motion of a user on a surface”</p> <p>Structure: accelerometer (210)</p>

Dkt. No. 59, Ex. A at 3; Dkt. No. 66 at 11; Dkt. No. 68 at 6–7. The parties submit that this term appears in Claim 9. Dkt. No. 59, Ex. A at 3; Dkt. No. 68 at 6–7.

---

<sup>2</sup> *Greenberg*, 91 F.3d at 1583 (“‘detent’ denotes a type of device with a generally understood meaning in the mechanical arts, even though the definitions are expressed in functional terms”); *id.* (“It is true that the term ‘detent’ does not call to mind a single well-defined structure, but the same could be said of other commonplace structural terms such as ‘clamp’ or ‘container.’ What is important is not simply that a ‘detent’ or ‘detent mechanism’ is defined in terms of what it does, but that the term, as the name for structure, has a reasonably well understood meaning in the art.”)



### (1) The Parties' Positions

Defendants argue that “[a]pparatus’ is a nonce word that overcomes that [*sic*] the presumption against the application of means-plus-function principles here.” Dkt. No. 66 at 11. Defendants further argue that “the corresponding structure for this term is ‘an accelerometer,’ which is the only piece of equipment that the specification describes as performing the three-dimensional motion-detecting function.” *Id.* at 12. Defendants also cite prosecution history. *See id.* at 12–13.

Plaintiffs reply that because *Samsung* found Claim 9 indefinite, the Court need not construe this term in Claim 9. Dkt. No. 67 at 6. Alternatively, Plaintiffs argue that the presumption against means-plus-function treatment has not been rebutted for this term that “lacks the phrase ‘means’ and is not written in the format of [nonce] + [transition] + [present-participle function].” *Id.* Plaintiffs also argue that Defendants’ proposed construction is too narrow because “motion may be detected by a number of sensors or devices, which the motion detection apparatus may include.” *Id.*

### (2) Analysis

Claim 9 recites (emphasis added):

9. A system comprising:

*a motion detection apparatus to detect three dimensional motion of a user on a surface;*

an incline logic to utilize the motion detected by the motion detection apparatus to make a calculation of an incline of the surface to associate with user steps, wherein the calculation is performed for one or more of the user steps based on identifying a vertical travel up portion of the step, identifying a vertical travel down portion of the step, and computing a difference between the vertical travel up portion and the vertical travel down portion of the step; and

an energy calculation logic to calculate a calorie expenditure of the user, based on the three dimensional motion of the user, wherein the energy calculation logic takes into account the incline of the surface.

Substantially the same analysis applies to this term as *Samsung* applied to the term “step calculation logic to utilize the motion detected by the accelerometer to detect and count steps.” *See Samsung* at 26–29. In short, Plaintiffs have not shown that “motion detection apparatus” connotes any structural meaning. Rather, this phrase is merely functional. *See Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094, 1099 (Fed. Cir. 2014) (“The question is whether the claim language names particular structures or, instead, refers only to a general category of whatever may perform specified functions.”).

Plaintiffs have cited *Al-Site Corp. v. VSI International Inc.*, which found that “eyeglass hanger member” and “eyeglass contacting member” were not means-plus-function terms. 174 F.3d 1308, 1318 (Fed. Cir. 1999). In *Al-Site*, however, the Federal Circuit noted that the claims recited structural limitations that related these terms to the frame of the eyeglasses. *See id.* at 1318–19. In the present case, by contrast, the claim does not relate the motion detection apparatus to any structure. *Al-Site* is therefore distinguishable.

Thus, Defendants have overcome the presumption against means-plus-function treatment, and the Court finds that “a motion detection apparatus to detect three dimensional motion of a user on a surface” is a means-plus-function term governed by 35 U.S.C. § 112, ¶ 6. The parties have not presented any dispute as to the claimed function, which is “to detect three dimensional motion of a user on a surface.” The parties dispute the proper corresponding structure.

The specification links the claimed function to accelerometers:

The user’s stepping *motion* may be *measured* by various types of *accelerometers* (inertial sensors). A simple inexpensive step counter uses a two-axis accelerometer and requires that the user place the device in a certain position so that the stepping motion can accurately be measured. More advanced step counters use a tri-axis accelerometer to allow the device to measure steps regardless of where the device is placed. Alternatively, the user’s motion may be detected by two two-axis accelerometers, or another detection mechanism which provides motion data.

'556 Patent at 4:21–31 (emphasis added); *see id.* at 4:17–20 (“The process starts, in one embodiment, when the accelerator [*sic*, accelerometer] detects motion. In one embodiment, the accelerometer is continuously monitoring for motion.”).<sup>3</sup>

Plaintiffs submit that the specification also refers to altimeters:

In one embodiment, in addition to using accelerometer data, additional sensor data may be used to more accurately determine the incline. In one embodiment, the additional sensor may be a *pressure sensor or altimeter*.

*Id.* at 4:41–44 (emphasis added). Yet, this disclosure refers to what may be used “*in addition to* using accelerometer data” and refers to the determination of the incline, not the detection of motion.

This disclosure therefore does *not* clearly link the claimed function to the pressure sensor or altimeter. *See B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997) (“structure disclosed in the specification is ‘corresponding’ structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim”).

Plaintiffs have also noted that the specification discloses that an altimeter or pressure sensor may “help more accurately describe the motion of the object”:

In one embodiment, the system may further include *an altimeter 255, or pressure sensor*. In one embodiment, the altimeter 255 may be calibrated using network triangulation for a mobile phone based step counter system 200. In one embodiment, if global positioning system (GPS) data is available, it may be used to calibrate the altimeter. The altimeter’s output indicates the change in altitude. This information is used, in one embodiment, by incline logic 240 to determine the incline. In one embodiment, the data from the altimeter 255 and accelerometer 210 are used in combination to get a more accurate measurement of the slope. The combination provides an accurate measurement of the incline. Knowing that an object is moving and quantifying how it is moving helps in determining whether pressure changes sensed by the altimeter 255 are due to changes in altitude or weather. Furthermore, *changes in pressure as detected by the altimeter 255, while*

---

<sup>3</sup> Defendants have also cited prosecution history. *See* Dkt. No. 66, Ex. D, July 27, 2009 Amendment at 10. Defendants have not persuasively shown, however, that the patentee made any clear statements limiting the motion detection apparatus to being an accelerometer.

*a device is in motion, will help more accurately describe the motion of the object and, specifically, the change in altitude.*

'556 Patent at 3:19–37 (emphasis added). On balance, this disclosure regarding altimeters and altitude contains no clear linkage between the “altimeter . . . or pressure sensor” and the claimed function of detecting *three dimensional* motion of a user on a surface.

The Court therefore hereby finds that “**a motion detection apparatus to detect three dimensional motion of a user on a surface**” is a means-plus-function term, the claimed function is “**to detect three dimensional motion of a user on a surface,**” and the corresponding structure is “**an accelerometer.**”

#### I. “incline”

Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
“slope”	“slope”

Dkt. No. 59, Ex. A at 1; Dkt. No. 66 at 13; Dkt. No. 68 at 3. The parties submit that this term appears in Claims 1, 8, 9, 10, 11, 17, and 18. Dkt. No. 59, Ex. A at 1; Dkt. No. 68 at 3.

##### (1) The Parties’ Positions

Plaintiffs argue that “the patent states that incline can have an angle, but does not limit the term ‘incline’ to be the angle.” Dkt. No. 63 at 5. Defendants respond that “it appears that the term ‘incline’ is no longer in dispute, and [Defendants] respectfully submit[] that the Court should construe this term as ‘slope.’” Dkt. No. 66 at 14. Plaintiffs’ reply brief does not address this term. *See* Dkt. No. 67. In their November 20, 2018 Joint Claim Construction Chart, the parties confirm that they have reached agreement that “incline” means “slope.” Dkt. No. 68 at 3.

In accordance with the parties’ agreement, the Court hereby construes “**incline**” to mean “**slope.**”

**J. “[based on/calculated by] identifying a vertical travel up portion of the step, identifying a vertical travel down portion of the step, and computing a difference between the vertical travel up portion and the vertical travel down portion of the step”**

Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
Plain meaning	Ordinary meaning [subject to the constructions for “vertical travel up/down portion of the step”]

Dkt. No. 59, Ex. A at 2; Dkt. No. 66 at 14; Dkt. No. 68 at 3. The parties submit that this term appears in Claims 1, 9, and 17. Dkt. No. 59, Ex. A at 2; Dkt. No. 68 at 3.

Defendants propose that this term need not be construed apart from the *Samsung* constructions of the constituent terms “vertical travel up” and “vertical travel down.” Dkt. No. 66 at 14. Plaintiffs reply that “Uniloc will rest on its prior pleadings . . . as to terms that were already construed by Judge Gilstrap [in *Samsung*],” including this term. Dkt. No. 67 at 2.

The Court therefore hereby construes **“[based on/calculated by] identifying a vertical travel up portion of the step, identifying a vertical travel down portion of the step, and computing a difference between the vertical travel up portion and the vertical travel down portion of the step”** to have its **plain meaning** (apart from the Court’s construction of constituent terms).

**K. “based on the steps and incline data” and “based on the step data and the incline data”**

Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
Plain meaning	Based on both the steps/the data about steps taken by the user and [the] incline data

Dkt. No. 59, Ex. A at 2; Dkt. No. 66 at 15; Dkt. No. 68 at 3–4. The parties submit that this term appears in Claims 2 and 19. Dkt. No. 59, Ex. A at 2; Dkt. No. 68 at 3–4.

(1) The Parties' Positions

Defendants submit that their proposal incorporates the *Samsung* constructions of “incline data” and “step data.” Dkt. No. 66 at 15. Defendants also argue that the word “and” in these terms requires using *both* step data *and* incline data, not one or the other. *Id.*

Plaintiffs reply that “there certainly is no reason to construe a common English word,” namely the word “and.” Dkt. No. 67 at 7.

(2) Analysis

Defendants have not shown that the parties have any dispute as to the meaning of the word “and.” Defendants’ proposal of “both” is therefore unnecessary and would tend to confuse rather than clarify the scope of the claims. *See, e.g., Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy”). Construction is nonetheless appropriate as to the term “based on the step data and the incline data” because the Court construed “step data” in *Samsung*, and Plaintiffs’ reply brief contains no apparent opposition to that construction of “step data.” *See* Dkt. No. 67 at 7 (“Huawei’s only remaining request as to these terms is for a construction of the word ‘and.’”).

The Court therefore hereby construes these disputed terms as set forth in the following chart:

<u>Term</u>	<u>Construction</u>
<b>“based on the steps and incline data”</b>	<b>Plain meaning</b>
<b>“based on the step data and the incline data”</b>	<b>“based on the incline data and the data about steps taken by the user”</b>

## L. Order of Steps in Claims 17 and 18

Plaintiffs' Proposed Construction	Defendants' Proposed Construction
Uniloc contends the Court should not construe any of the method claims to require steps be performed in a particular order.	Performed in the recited order in claims 17 and 18

Dkt. No. 59, Ex. A at 5; Dkt. No. 66 at 15; Dkt. No. 68 at 8.

### (1) The Parties' Positions

Plaintiffs argue that “[t]here is nothing that requires calculation of the incline to succeed calculating user step data.” Dkt. No. 63 at 10. Plaintiffs further argue that “there is no reason why the steps of claim 18, 19, and 20 have to follow all the steps of claim 17.” *Id.* at 11.

Defendants respond that “[t]he steps of the methods in claims 17 and 18 should be construed to be performed in order because each step requires certain feature(s) from a prior step.” Dkt. No. 66 at 16.

Plaintiffs reply, as to Claim 17, that there is no requirement that the incline is calculated after the accelerometer data, or after step data is calculated, or vice versa. Dkt. No. 67 at 8. As to Claim 18, Plaintiffs argue that “nothing logically—let alone in the written claim—requires that the altimeter measure the altitude before, during or after the step is taken.” *Id.* at 9.

### (2) Analysis

“As a general rule, ‘[u]nless the steps of a method [claim] actually recite an order, the steps are not ordinarily construed to require one.’” *Mformation Techs., Inc. v. Research in Motion Ltd.*, 764 F.3d 1392, 1398 (Fed. Cir. 2014) (quoting *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1342 (Fed. Cir. 2001)).

Courts apply a two-part test to determine whether a particular order of steps is required: “First, we look to the claim language to determine if, as a matter of logic or grammar, they must

be performed in the order written,” and “[i]f not, we next look to the rest of the specification to determine whether *it* directly or implicitly requires such a narrow construction.” *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1369–70 (Fed. Cir. 2003) (citation omitted); *see Mantech Envtl. Corp. v. Hudson Envtl. Servs., Inc.*, 152 F.3d 1368, 1376 (Fed. Cir. 1998) (“the sequential nature of the claim steps is apparent from the plain meaning of the claim language”); *see also E-Pass Techs., Inc. v. 3Com Corp.*, 473 F.3d 1213, 1222 (Fed. Cir. 2007) (“[B]ecause the language of most of the steps of its method claim refer to the completed results of the prior step, E-Pass must show that all of those steps were performed in order.”).

Claims 17 and 18 of the ’556 Patent recite:

17. A method comprising:

receiving data from an accelerometer, the data indicating a motion of a user in three dimensions;

calculating, by a mobile device, user step data based on the accelerometer data; and

calculating an incline by the mobile device, and associating the incline with the step data, wherein for one of more of the steps the incline is calculated by identifying a vertical travel up portion of the step, identifying a vertical travel down portion of the step, and computing a difference between the vertical travel up portion and the vertical travel down portion of the step.

18. The method of claim 17, further comprising:

detecting a change in altitude using an altimeter; and

utilizing the change in altitude to verify the incline of the surface.

In Claim 17, the “calculating . . . user step data” step refers back to “the accelerometer data” that is received in the step of “receiving data from an accelerometer.” Plaintiffs agree that the “receiving data” step must be performed before the “calculating . . . user step data” step. Dkt. No. 67 at 8.

The subsequently recited step of “calculating an incline by the mobile device, and associating the incline with the step data” refers back to the “step data” in the “calculating . . . user step data” step. Plaintiffs argue that this step’s recital of merely “associating the incline with the



step data” “does not mean that the incline is calculated after the accelerometer data, or after step data is calculated, or vice versa.” *Id.* A fair reading, however, is that this language in Claim 17 requires that the steps must be performed in the recited order “as a matter of logic.” *Altiris*, 318 F.3d at 1369; *see E-Pass*, 473 F.3d at 1222.

In Claim 18, the step of “utilizing the change in altitude to verify the incline of the surface” in Claim 18 refers back to the “change in altitude” in the “detecting a change in altitude using an altimeter” step in Claim 18 as well as the “incline” in the “calculating an incline” step in Claim 17. The “utilizing the change in altitude” step in Claim 18 therefore must be performed after the “calculating an incline” step in Claim 17 and the “detecting” step in Claim 18. *See id.*

The step in Claim 18 of “detecting a change in altitude using an altimeter,” however, does not refer back to any of the steps in Claim 17. Thus, “detecting a change in altitude using an altimeter” can be performed at any time so long as it occurs prior to “utilizing the change in altitude to verify the incline of the surface.”

The Court therefore hereby finds as follows regarding the order of steps in Claim 17 and Claim 18 of the ’556 Patent:

<u>Claim</u>	<u>Order of Steps</u>
<b>Claim 17</b>	<b>The steps of Claim 17 must be performed in the recited order.</b>
<b>Claim 18</b>	<b>The “utilizing the change in altitude” step in Claim 18 must be performed after the “calculating an incline” step in Claim 17 and the “detecting” step in Claim 18.</b>

## V. CONCLUSION

The Court adopts the constructions set forth in this opinion for the disputed terms of the patents-in-suit.

The parties are ordered to not refer to each other's claim construction positions in the presence of the jury. Likewise, in the presence of the jury, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the Court. The Court's reasoning in this order binds the testimony of any witnesses, and any reference to the claim construction proceedings is limited to informing the jury of the definitions adopted by the Court.

**SIGNED this 14th day of December, 2018.**

  
ROY S. PAYNE  
UNITED STATES MAGISTRATE JUDGE